

REMARKS

Petition for Extension of Time Under 37 CFR 1.136(a)

It is hereby requested that the term to respond to the Examiner's Action of August 25, 2006 be extended three months, from November 25, 2006 to February 26, 2007.

Authorization to charge a Credit Card is given to cover the extension fee. The Commissioner is hereby authorized to charge any additional fees associated with this communication to Deposit Account No. 19-5425.

In the Office Action, the Examiner indicated that claims 1 through 21 are pending in the application, that claims 13-21 have been withdrawn from consideration, claims 1-4 and 6-12 have been rejected, and claim 5 has been objected to.

Claim Objections

On page 2 of the Office Action, the Examiner objected to various informalities in claims 3-7 and 10-11. Applicant has amended these claims in accordance with the Examiner's suggestion to overcome this objection, and the Applicant has made numerous additional claim amendments to place the claims in better form.

Allowable Subject Matter

On page 7 of the Office Action, the Examiner has indicated that claim 5 is objected to as being dependent on a rejected base claim, but would be allowable if rewritten in independent form to include all the limitations of the base claim and any intervening claims. Applicant thanks the

Examiner for this indication of allowable subject matter, but chooses at this time to seek allowance of the base claim and/or intervening claims.

Claim Rejections, 35 U.S.C. § 112

On page 2 of the Office Action, the Examiner rejected claims 9-11 under 35 U.S.C. §112, second paragraph, as being indefinite. Applicant has amended these claims to point out that the present invention does not print ink but instead involves the application of liquid toner (not ink) using an electrostatic or inkjet process. In view of these amendments Applicant submits that the present claims meet the requirements of 35 U.S.C. §112 and thus Applicant requests the Examiner to reconsider and withdraw this rejection of the claims.

Claim Rejections, 35 U.S.C. §103

On page 3 on the Office Action, the Examiner rejected claims 1, 8 and 12 under 35 U.S.C. §103(a) as being unpatentable over Grabau et al. (US 6,147,662). Also on page 3 on the Office Action, the Examiner rejected claims 2 and 9 under 35 U.S.C. §103(a) as being unpatentable over Grabau et al. in view of Chung (US 6,404,643). On page 4 on the Office Action, the Examiner rejected claims 3 and 7 under 35 U.S.C. §103(a) as being unpatentable over Grabau et al. in view of Takasugi (US 6,837,438). On page 5 on the Office Action, the Examiner rejected claims 4 and 6 under 35 U.S.C. §103(a) as being unpatentable over Grabau et al. in view of Takasugi et al. and deVall (US 5,608,417). On page 6 on the Office Action, the Examiner rejected claims 10-11 under 35 U.S.C. §103(a) as being unpatentable over Grabau et al. in view of Takasugi and Chung.

The Present Invention

The present invention is an RFID device formed using an inexpensive process. The device of the present invention is an RFID device that is very thin in dimension and is highly conductive and inexpensive to manufacture because of unique techniques used to produce the metallic wiring structure and to interconnect the silicon devices to the metallic wiring structure. A metallic unsintered toner is applied on the substrate in the desired pattern using printing techniques (e.g., electrostatic or inkjet techniques). A thin silicon wafer is placed active side down on the unsintered metal toner pattern, then the whole structure is heated to a temperature suitable for the substrate (for example, for a PET substrate 125°C for approximately 2 minutes) sintering the metal toner and bonding the metal to the electrode pads on the silicon chip.

In an alternate method of connecting the chip to the substrate, the chip itself contains on its top, active surface a coil of printed metal that serves as the primary of an air core transformer. The chip is mechanically bonded by a suitable adhesive, in close proximity to a secondary transformer winding printed on the printed wiring structure of the “tag” device.

U.S. Patent No. 6,147,662 to Grabau et al.

U.S. Patent No. 6,147,662 to Grabau et al. (“Grabau”) teaches a process whereby a conductive ink is printed on a substrate to form an antenna on the substrate. Various techniques are then used for connecting the printed antenna to a chip. Since ink is used, there is no sintering process described in Grabau. Applicant notes that while Grabau repeatedly uses the term “ink or

toner” to describe the antenna that is printed on the substrate, Grabau provides no enablement for anything other than a conductive ink, and provides no teaching or suggestion of the use of a sintered metal toner to form the antenna.

The Examiner has not Established a *prima facie* Case of Obviousness

As set forth in the MPEP:

To establish a *prima facie* case of obviousness, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skilled in the art, to modify the reference or to combine reference teachings.

MPEP 2143

The present claimed invention requires the formation of “an antenna means on said substrate, said antenna means comprising a sintered metal toner formed in a pattern on said substrate comprising at least one loop...” This sintered metal toner formation is substantially different from the simple printing of a metallic ink on a substrate as is taught by Grabau, and the sintered metal toner results in conductivity that is significantly greater than that provided by the simple printing of metallic ink as is taught by Grabau.

Applicant notes that Grabau uses the terms “ink” and “toner” as synonyms throughout its specification, yet provides examples only of metallic inks to be used. Further, nowhere in Grabau is there any teaching or suggestion of forming a *sintered* toner (or a sintering process) on a substrate as is claimed in the present invention. The mere fact that Grabau uses the word “toner” when describing its conductive antenna does not provide sufficient teaching or suggestion of the present invention; nowhere has Grabau provided enabling disclosure for a toner-based conductive antenna,

Grabau enables only an ink-based printed conductive antenna. While a non-enabling reference may qualify as prior art for the purpose of determining obviousness, it is prior art only for that which it teaches (in this case, Grabau may qualify as prior art with respect to metallic inks, but *not* for toners, let alone *sintered* toners) (See ***MPEP 2121.01*** and cases cited therein).

Each of the pending claims include the above-cited elements neither taught nor suggested by Grabau (or any of the secondary references). Accordingly, for the reasons set forth above, pending claims 1-5 and 7-12 patentably define over the cited art and are in condition for allowance. Reconsideration of the claims are hereby requested.

Conclusion

The present invention is not taught or suggested by the prior art. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the rejection of the claims. An early Notice of Allowance is earnestly solicited.

Included herein is a Petition for extension of time to respond to the Examiner's Action, and authorization to charge the extension fee to a credit card. The Commissioner is hereby authorized to charge any additional fees or credit any overpayment associated with this communication to Deposit Account No. 19-5425.

Respectfully submitted

February 26, 2007
Date

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